

I- INTRODUCTION

In Egypt, horticultural commodities are a major supplier to the domestic market and account for a considerable amount of the total agriculture exports.

Citrus is the leading fruit crop produced in Egypt. The area under citrus production has continued to expand largely due to the reclamation of dessert lands as the crop is well suited to its environment.

The total planted area of Citrus species and cultivars increased in the last few years to reach about 340433 Feddans and the productive area is about 311061 Feddans producing nearly 2243178 Tons¹.

The area planted by orange trees amounts to 216192 Feddans, while the productive area is about 204053 Feddans producing nearly 1522980 Tons¹.

The Navel orange is the principal orange cultivar in Egypt representing nearly 65 – 70% of the total orange cultivated area. It is mainly produced in five locations: Behera, Kalyoubia, Sharkia, Menofia and West Noubaria.

Egypt has a long history in the exportation of citrus fruits to different countries. The projection of domestic consumption and total production up to the year 2000 indicate that Egypt will continue to have a surplus for export that is estimated at nearly 560,000 Tons².

1- Ministry of Agriculture, Central Management for Agricultural Economics, 1997.

2- Market Oriented Development for Major Horticulture Crops in Egypt "Citrus" vol. II (NARP Project, ARC, MOA, 1994).

Unfortunately, citrus fruits suffer from relatively high losses during the harvesting and handling chain. These losses occur mainly from several mechanical damages resulting from improper harvesting time and methods and the different steps of handling (i.e. sorting, packing, transporting, marketing and/or storage). Mechanical damage in most cases is followed by pathological infections, which add to the problem and increase crop losses.

Any improvement in the harvesting and handling chain will be of positive effect on maintaining fruit quality and reducing marketing losses.

Careful management during growth and maturation, defining the proper harvest time, training of labour, protecting the fruits from environmental changes and wise use of nutrients, growth regulators, pesticides and fungicides must be always taken into consideration.

A variety of chemical treatments are used to reduce pre- and post-harvest losses. Approval for use of fungicides as post-harvest treatments identified as posing carcinogenic or other serious health risks, may be revoked.

In this study, effect of orchard location, method of irrigation, non-traditional treatments to replace using chemical fungicides and other equipment related to the handling procedure i.e. packing methods and different packages are all taken into consideration.

This study may help in maintaining fruit quality, prolonging the shelf life and the marketing period, improving the cold storage environment during transportation, and finally increase the exports of Navel orange fruits to the world markets.